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EXAMINER

HAMMOND, BRIGGITTE R

ART UNIT

PAPER NUMBER

2833

DATE MAILED: 06/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
10/024,054

Applicant(s)
B. Caldwell

Examiner
Brigitte R. Hammond

Art Unit
2833



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Apr 16, 2003
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above, claim(s) 1-26 and 37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-30, 32-36, 38-42, and 45 is/are rejected.
- 7) ☒ Claim(s) 31, 43, and 44 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Dec 17, 2001 is/are a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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DETAILED ACTION

1. This action is in response to applicant's election/amendment received on April 16, 2003 and filed as Paper No. 3. Applicant's election of claims 27-36 with traverse is acknowledged.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "the integrated circuit package" (claim 27), the signal pins being unsupported by a stanchion in an area enclosed by the support member (claim 31), the support member being oriented parallel to the plane of major extension of the circuit board (claim 32), the support member forming a permanent part of the circuit structure (claims 33, 44), the cap being screwed onto the pin (claim 39) and the cap adhering to a recess in the circuit package (claim 43) must be shown or the features canceled from the claims. **No new matter should be entered.**

A proposed drawing correction or corrected drawings are required in reply to the Office action **to avoid abandonment** of the application. The objection to the drawings **will not** be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 31-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as

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the invention. It is unclear to the examiner what is the plane of major extension of the circuit board. Therefore, claims 32-34 were not examined in view of art.

5. Claim 31 recites the limitation "signal pins which are unsupported" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

7. Claims 27-30 and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Yacoub.

Yacoub discloses a circuit structure comprising an integrated circuit package (IC), at least one signal pin 110, a circuit board 200, wherein the signal pin is supported by a support member 100.

Regarding claim 28, the support member 100 is a two or more insulated pin stanchion with holes 108.

Regarding claim 30, the support member 100 encloses area 108.

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Regarding claim 29, the support member 100 is placed only at the corners of the structure, as shown in fig. 2.

Regarding claim 35, the signal pin is cylindrical and non fluted.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 36, 38, 42 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yacoub in view of Crane, Jr. Regarding claims 36 and 45, Yacoub discloses the invention substantially as claimed. Yacoub does not disclose the pin being fluted. However, fluted pins are well known in the art as evidenced by Crane, Jr. Crane, Jr. discloses in fig. 28 fluted pins 500 in a support structure. Therefore it would have been obvious to one of ordinary skill to modify the circuit structure of Yacoub by making the pins fluted as taught by Crane, Jr. for a press-fit connection.

Regarding claim 38, the signal pin of Yacoub has a conductive cap 118 at one end.

Regarding claim 42, the cap 118 of Yacoub is conductive.

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10. Claims 39 -41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yacoub and Crane, Jr. as applied to claim 38 above, and further in view of Murdock. Neither Yacoub nor Crane, Jr. disclose the pin having a cap made of a high dielectric material screwed onto it. However, Murdock discloses pin 6 having a cap 7e made of a high dielectric material and capable of being screwed (see col. 3, lines 55-60) onto the pin. Therefore it would have been obvious to one of ordinary skill to modify the pin of the structure of Yacoub by making the cap of a high dielectric material and being screwed onto the pin, since it is well known to use a high dielectric material for its strong mechanical strength and also known to screw on a cap to a pin to assist in holding the cap and pin in place as taught by Murdock.

Regarding claim 41, the support member of Yacoub is a permanent insulated stanchion.

Allowable Subject Matter

11. Claims 31,43 and 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including **all** of the limitations of the base claim **and any intervening claims**. Regarding claim 31, patentability resides, at least in part, in the circuit structure having signal pins which are unsupported by a stanchion in the area enclosed by the support member, in combination with the other limitations of the base and intervening claims and regarding claim 43, patentability resides, at least in part, in the cap of the circuit structure adhering to a recess on the IC package through an adhesive melt, in combination with the other limitations of the base and intervening claims..

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Response to Restriction Requirement

12. Applicant's arguments filed April 18, 2003 have been fully considered but they are not persuasive. In response to applicant's argument that "no serious burden would be placed upon the examiner by searching 3 subclasses". The examiner replies that restriction under 35 USC 121 requires that 1). The inventions are distinct, each from the other for the following reasons:

Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, **invention I** has separate utility such as the signal member can be used in any support member, for example a connector housing. And **invention II** has separate utility such as the support member can be used with any type pin, for example a pressfit pin. See MPEP § 806.05(d).

2). The inventions are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the circuit structure does not require the pin to have a central elongated body. The subcombination has separate utility such as the signal transmitting member can be used in any circuit assembly.

3). **Inventions III and II** are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the

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particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the circuit structure does not require the support member to be organic plastic. The subcombination has separate utility such as the support member can be used in any circuit structure.

13. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, **restriction for examination purposes as indicated is proper. The Restriction is made Final.**

Conclusion


14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bogursky et al. 5,451,174, Steen et al. 5,205,741 and Collier 4,927,372 were cited for devices with similar pin supports.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brigitte R. Hammond whose telephone number is (703) 305-0032.

The examiner can normally be reached on Monday - Thursday from 8:30 A.M. to 6:00 P.M. The examiner can also be reached on alternate Fridays.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Brigitte R. Hammond
June 12, 2003


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